APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/725,393	11/29/2000	Arnab Das	3-9-56	9723

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EXAMINER
MYERS, PAUL R

ART UNIT	PAPER NUMBER
2111	

MAIL DATE	DELIVERY MODE
07/17/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	09/725,393	DAS ET AL.
	Examiner	Art Unit	
	Paul R. Myers	2111	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>20 June 2007</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14 and 16-23* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14, 16-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments filed 6/20/07 have been fully considered but they are not

persuasive.

Applicants have argued the definition of puncturing to be as defined in "Punctured

Convolutional Codes of Rate *(n-1)/n* and Simplified Maximum Likelihood Decoding" by Cain,

Clark jr., and Geist. Herein after Cain et al. Applicants included the Cain et al reference in the

arguments however did not cite it on a 1449. Therefore the examiner will cite it in an 892.

Applicants argued that added claim language" the puncturing including removing bits

from the channel coded encoder packet" makes clear that the Cain et al definition of Puncturing

is to be used. This argument is persuasive. The examiner will therefore read the claim limitation

of puncturing to be the puncturing as defined by Cain et al.

The examiner notes however that the claim language is written in the alternative.

"puncturing and/or repeating the channel coded encoder packet". While the examiner agrees that

Bruckman does not teach the "puncturing" as now defined. Bruckman still teaches the repeating

See Board Decision of 4/20/07. When the output fragment is "Based *entirely on the size of the*

input packet does not exceed the determined fragment size" this is the claimed repeating.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

3.   Claims 1-5, 14, and 16-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Bruckman PN 2002/0051466 in view of Applicants admitted prior art and Tiedemann, Jr. et al

PN 5,914,950.

In regards to claims 1, 2, 14, 16, 18, 20-21 and 23: Bruckman teaches channel coding

packets to produce channel coded packets (See abstract); and repeating (transmitting the packets

that do not exceer the determined fragment size) the channel coded packets to produce a first

sub-packet (fragment) having a first size based on a size of the packet and a first data

transmission rate at which the first sub-packet is to be transmitted (See abstract and paragraph

0026). Bruckman teaches the dynamic transmission rate control above. Bruckman et al also

teaches the first data transmission rate is based on first measured channel conditions however

these conditions are measured at the front end not the receiver. Applicants admitted prior art

teaches using measuring channel conditions at the receiver and transmitting either the channel

conditions or the desired transmission rate based upon the channel conditions to the transmitter.

(see page 1 lines 26-32). It would have been obvious to a person of ordinary skill in the art at the

time of the invention to use the receiver condition measurements because this would have

allowed for considering the entire channel not just a small part. Tiedemann, Jr. et al teaches the

transmitter selection a transmission rate that is different from and based upon the desired

maximum transmission rate of the receiver (Column 11 lines 43-64). It would have been

obvious to use a data transmission rate that is different from and based upon the desired

maximum transmission rate of the receiver because this would have taken into account factors

such as power requirements and other transmitters (see Tiedemann, Jr. et al Column 11 lines 43-

64)

In regards to claim 3: Bruckman et al teaches recombining the sub-packets (by

reassembler 34).

In regards to claims 4-5: Bruckman et al teaches the size of each fragment being

individually determined and the size being variable within a range since packets are digital the

sizes have only a discrete number of possibilities. Thus Bruckman et al teaches both the

fragments being different sizes and the fragments being of the same sizes.

In regards to claims 17, 19 and 22: applicants admitted prior art teaches the use of a

NACK message.

4.   Claims 6-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruckman

PN 2002/0051466 in view of applicants admitted prior art and Tiedemann, Jr. et al PN 5,914,950

as applied to claim 1 above, and further in view of Buchholz et al PN 5,337,313.

In regards to claims 6-7: Bruckman teaches the dynamic packet size and rate as

described above. Bruckman teaches adding a packet start and a packet end in accordance with

the FRF.12 protocol instead of adding a packet size identifier. Bruckman states that while the

invention is described in conjunction with the FRF.12 protocol it is not to be limited to that

protocol. Bruckman also gives an example of the ATM protocol which includes a five-byte

header but does not give details of the header information. Buchholz et al teaches a packet reassembly header (406) that includes a packet length field (660). It would have been obvious to a person of ordinary skill in the art at the time of the invention to include a packer size identifier because this would have allowed for the receiver front end to handle packet reassembly more efficiently.

In regards to claims 8 and 12: Bruckman teaches transmitting the fragments based upon their individual transmission rates however Bruckman does not expressly teach modulating the data. Official notice is taken that modulating data to transmit data is well known. For example Modems which stand for Modulator/demodulator. It would have been obvious to modulate the data because this would have allowed for the use of standard modems which have the advantage of having good resistance to noise on the wire.

In regards to claims 9 and 13: Bruckman stares that it is not required to inform the receiver of the transmission rate however it is advantageous to provide the rate information to the receiver/reassembler paragraph 0027.

In regards to claims 10-11: Buchholz et al teaches a protocol field that indicate the packet protocol.

Conclusion

5.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

PN 4504944 to Johannes teaches returning the received data rate for each channel.

PN 2002/0009061 to Willenegger teaches a data rate feedback.

PN 6,088,385 to Liu teaches a data rate feedback.

PN 6,694,469 to Jalali et al teaches using a feedback signal from the receiver to determine the data transmission rate.

PN 5,574,979 to West teaches fragmenting data into multiple data rates based upon a feedback signal from the receiver(s).

PN 6,298,092 to Heath, Jr. et al teaches the desired data rate at a receiver determines a feedback signal to the transmitter that is used to select the actual data transmission rate.

PN 5,682,379 to Mahany et al teaches the receiver selecting the data transmission rate.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul R. Myers whose telephone number is 571 272 3639. The examiner can normally be reached on Mon-Thur 6:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on (571) 272-3632. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PRM
July 10, 2007

PAUL R. MYERS
PRIMARY EXAMINER